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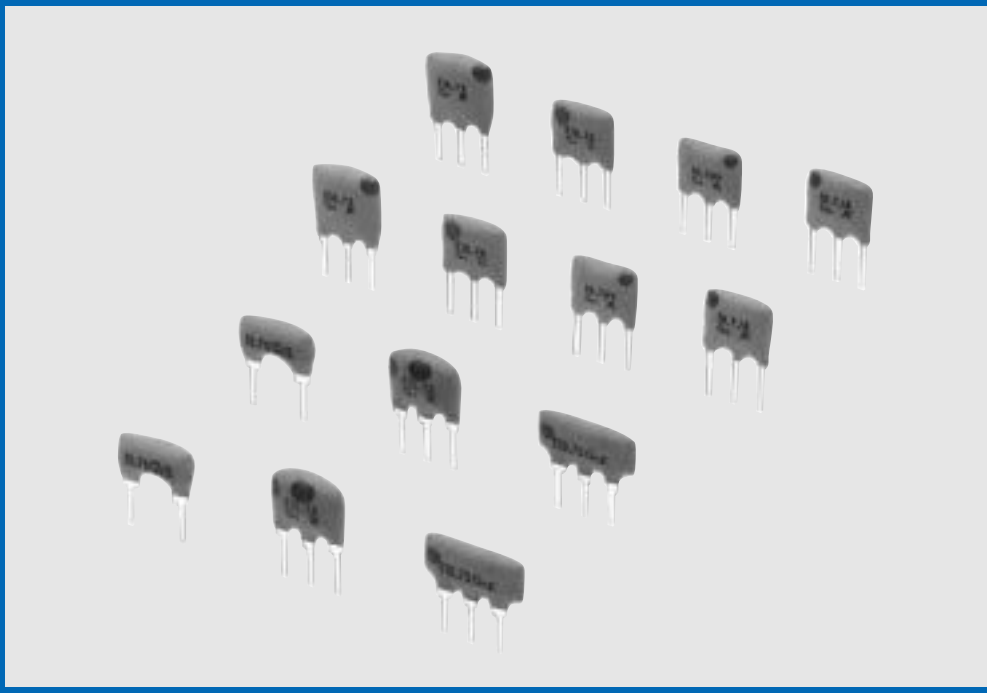
No.P61E5.pdf 98.6.22

CERAMIC FILTER (CERAFIL®) For FM Receivers

SFE10.7/SFT10.7/CDA10.7 Series

CERAMIC FILTER (CERAFIL®)



Innovator in Electronics

Murata
Manufacturing Co., Ltd.

Cat.No.P61E-5

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■ISO9000 CERTIFICATIONS

Manufacturing plants of these products in this catalog have obtained the ISO9002 quality system certificate.

Plants	Certified Date	Organization	Registration No.
Himi Murata Manufacturing Co., Ltd.	Jul. 29. 1992	RCJ *1	RCJ-86M-07
Taiwan Murata Electronics Co., Ltd.	Nov. 26. 1993	BCIQ *2	5E8Y001-00

*1 RCJ : Reliability Center for Electronic Components of Japan
*2 BCIQ : Bureau of Commodity Inspection and Quarantine

Introduction

FM-broadcasting generally has high fidelity and a high S/N ratio. In Europe and North America, there is a particularly large number of FM-broadcasting stations. The performance of FM-receivers is, therefore, greatly dependent on the characteristics of the intermediate frequency filter (selectivity, waveform symmetry, group delay time, etc.). Murata's ceramic filter SFE 10.7/SFT 10.7 Series for FM-receivers are monolithic type ceramic filters which use the energy trapped thickness vibration-mode of the piezoelectric ceramic.
Ceramic filters are compact and of simple structure, with high selectivity, excellent temperature and environmental characteristics, and favorable waveform symmetry. Because of these excellent features,
Murata's ceramic filter has stable receiving performance.
In recent years, FM-receiver technology has progressed rapidly;

- Electronic tuners have replaced mechanical tuners.
- Tuners have progressively been given higher selectivity and better functions for car-radio receivers.
- High fidelity characteristics have rapidly improved for home audio equipment.
- One-chip, non-adjustment ICs have been developed.
- Compact and low profile because of many chip components used (e. g. for headphone audio).
- Automatic insertion technology for taped components has progressed.

Various types of ceramic filters for FM receivers (SFE 10.7/SFT 10.7 series) are available to meet the needs of divers types of FM receivers.

■NOTICE

- Matching condition should be evaluated to perform stable electrical characteristics which are specified
- Covering filter with over coat,conditions,such as material of resin cure temperature and so on be evaluated well.
- Conformal coating of filter is not acceptable due to unsealed construction.
- Filter might be damaged when an excess stress will be applied.
- We can no warrant against defects caused by any use of the filter which deviates from the intended use as described in this catalog. Please contact us for any other characteristics, using conditions or application to the device which need to be extremely reliable.

■Part Numbering(✻Please specify the part numbers when ordering.)

(Ex.) **SF** **E** **10.7M** **A5** **H** — **Z**
❶ ❷ ❸ ❹ ❺ ❻

❶Application, Function.
❷Appearance, Shape, Dimensions
E : 2 section filter on I wafer
T : 3 section filter on I wafer
❸Center Frequency
"M"is added at the end when unit is MHz.
ex.) 10.7MHz → 10.7 M
❹Rating, Characteristics. (Customers Specifications)
❺Tolerance of Center Frequency

±30kHZ	No Code
±25kHZ	H
±20kHZ	K

❻Rank of Center Frequency

Code	30kHz Step	25kHz Step
D	10.64MHz±30kHz	10.650MHz±25kHz
B	10.67MHz±30kHz	10.675MHz±25kHz
A	10.70MHz±30kHz	10.700MHz±25kHz
C	10.73MHz±30kHz	10.725MHz±25kHz
E	10.76MHz±30kHz	10.750MHz±25kHz
Z	Combination A, B, C, D, E	
M	Combination A, B, C	

- Two center-frequency series are available : 30kHz step and 25kHz step. The 25kHz series is designated by the letter "H" at the end of the part number.
  Ex : SFE10.7MS3H-A
- Center frequency series ±20kHz step is available for synthesizer tuners. These are designated by the letter "K" at the end of the part number.
  Ex : SFE10.7MS3K-A

CERAMIC FILTER

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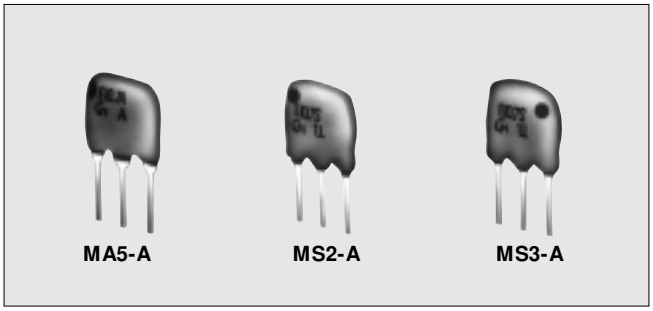
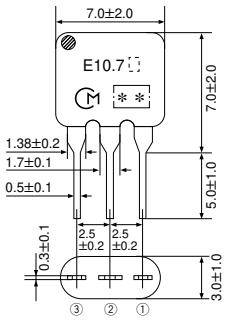
For FM Receiver SFE10.7 Series

■FEATURES

1. These miniature filters have high mechanical strength.
2. Low loss, favorable waveform symmetry, and high selectivity
3. Various band widths are available for applications in wide to narrow bands.
4. Small dispersion and stable characteristics.
5. Change in center frequency is typically within ±30ppm/℃ at −20 to +80℃.
6. High reliability.

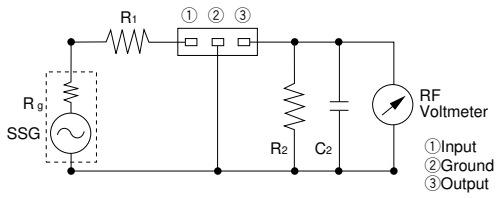


■DIMENSIONS



(in mm)

■MEASURING CIRCUIT



$R_g+R_1=R_2=330\Omega$
$C_2=10pF$
(Including stray capacitance and capacitance of RF voltmeter)

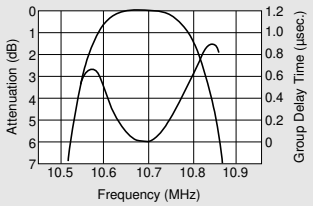
■SPECIFICATIONS

Part Number	3dB Band Width (kHz)	20dB Band width (kHz) max.	Insertion Loss (dB)	Spurious Attenuation (9–12MHz) (dB) min.
SFE10.7MA5-Z	280±50	650 (520)	6 (4)	30 (43)
SFE10.7MS2-Z	230±50	600 (420)	6 (4)	40 (45)
SFE10.7MS3-Z	180±40	520 (380)	7 (4.5)	40 (45)

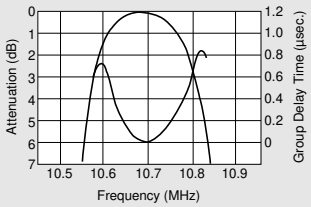
● Input/output matching impedance : 330Ω ( )Typ.value

■FREQUENCY CHARCTERISTICS

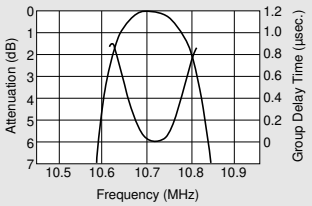
SFE10.7MA5-A



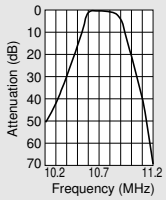
SFE10.7MS2-A



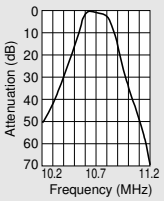
SFE10.7MS3-A



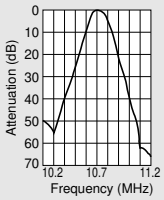
SFE10.7MA5-A



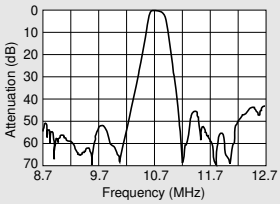
SFE10.7MS2-A



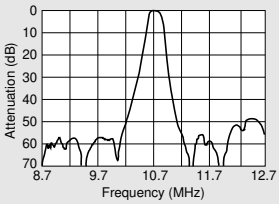
SFE10.7MS3-A



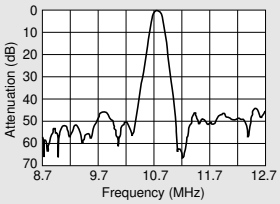
SFE10.7MA5-A



SFE10.7MS2-A

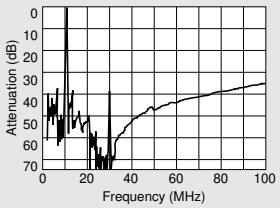


SFE10.7MS3-A



■SPURIOUS RESPONSE

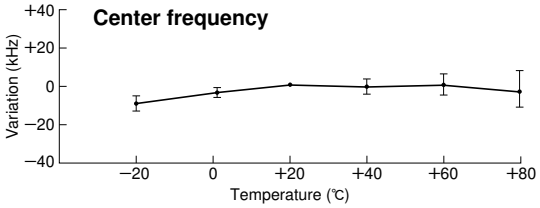
SFE10.7MA5-A



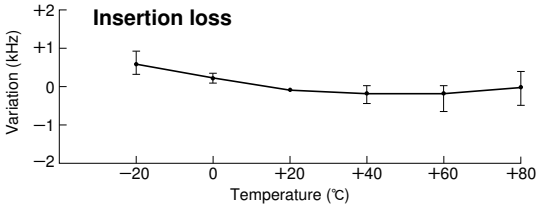
■TEMPERATURE CHARACTERISTICS

SFE10.7MS2-A

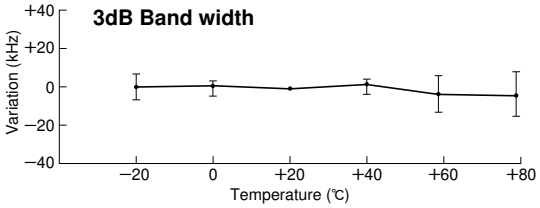
Center frequency



Insertion loss

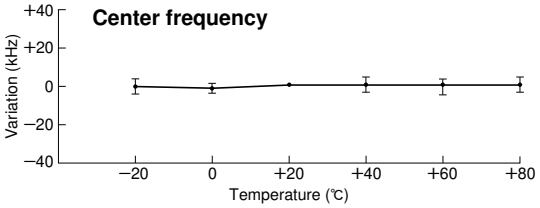


3dB Band width

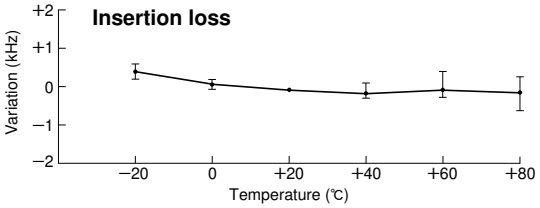


SFE10.7MS3-A

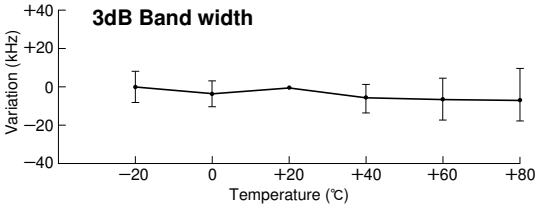
Center frequency



Insertion loss



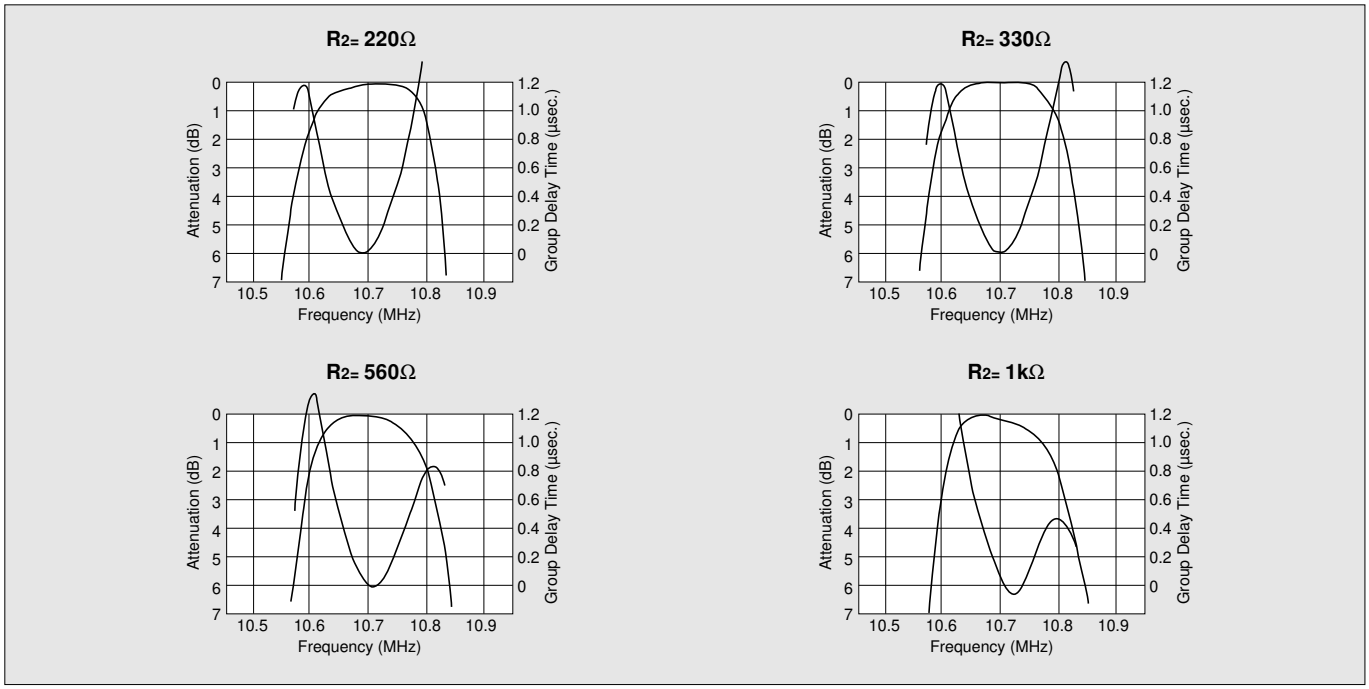
3dB Band width



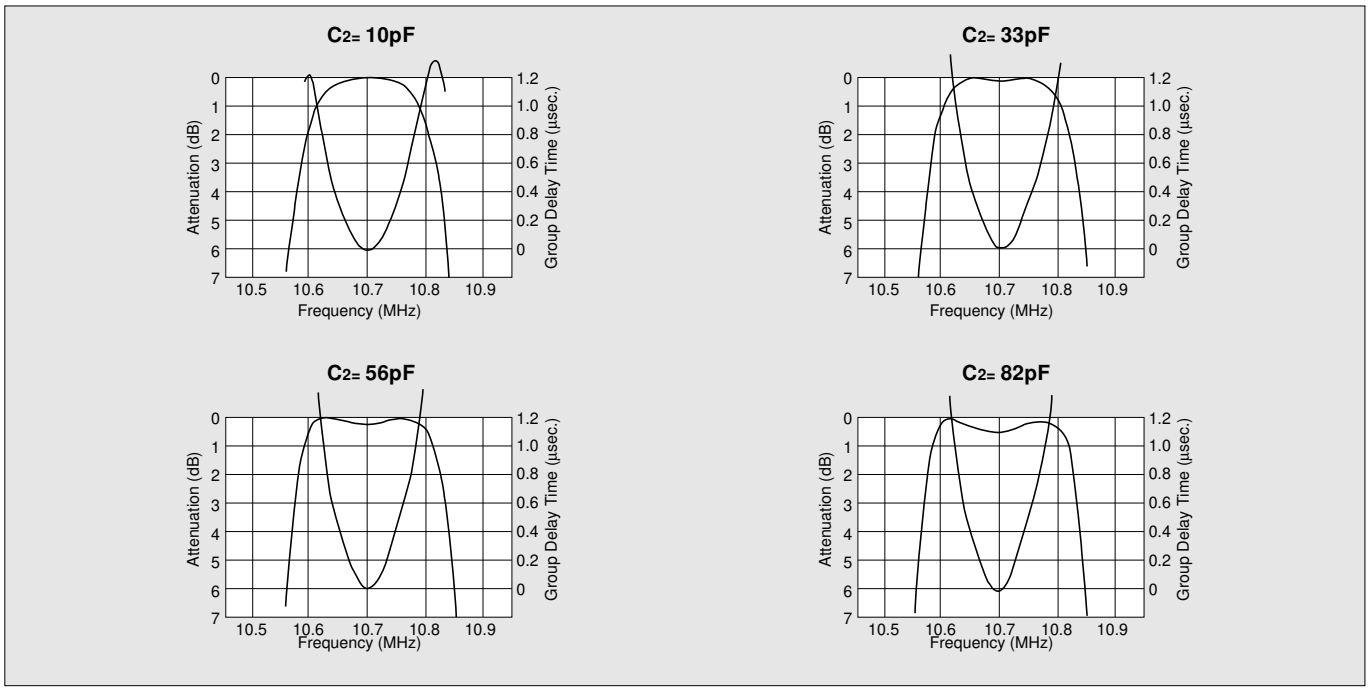
■MATCHING CONDITIONS

- When using ceramic filters, it is most important to match the input/output load to impedance 330Ω (pure resistance). Waveform symmetry is damaged when reactance is added to the input/output load.
- Two ceramic filters directly connected can be used for high selectivity. For reducing waveform variation, it is recommended to input a buffer AMP between ceramic filters.
- The SFE 10.7 and SFT 10.7 series are of input/output symmetric structure so that in theory there is no input/output directionality. Actual circuits may use different input/output loading conditions (for example, mismatched impedance) or capacitance load.
  In such cases, the waveform will be a little changed by the direction of the input/output of the ceramic filters.

Load resistance and waveform of SFE10.7MS2-A (R_g + R_1 = 330Ω)



Loaded capacitance and waveform for SFE10.7MS2-A (R_1 + R_g = R_2 = 330Ω)



CERAMIC FILTER

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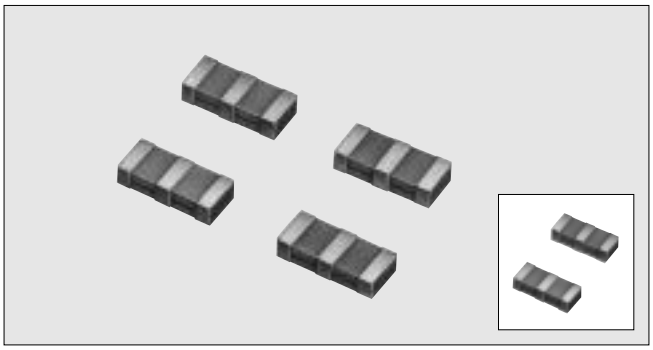
Chip Ceramic Filter SFECV10.7 Series

Contributing to the Reduction of AM/FM IF Circuit

The chip CERAFIL® SFECV series is high performance filter compare to the conventional series (SFECA).
Together with the PFWCC455 filter series for AM, the SFECV10.7 filter series reduces the size of IF circuit in AM/FM radios.



■FEATURES

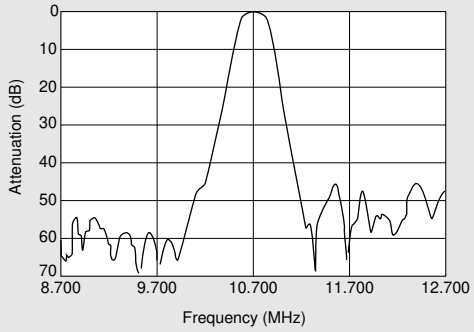
1. Super-thin. Only 1.5mm. The most suitable ceramic filter available for thinning substrates.
2. Heat resistant. Reflow soldering can be performed because of its excellent heat resistance.
3. The piezoelectric element is connected in the sandwich shape by heat heat resistant substrates, thus it has excellent mechanical strength, and it is suitable for automatic mounting.
4. Various band-widths are available. Select a suitable type in accordance with the desired selectivity.
5. Electrical characteristics are the same as conventional Cerafil®.

■APPLICATIONS

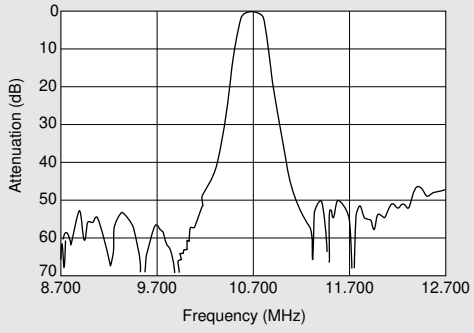
1. Small, thin radios
2. Headphone stereos
3. CAR radios

■FREQUENCY CHARACTERISTICS

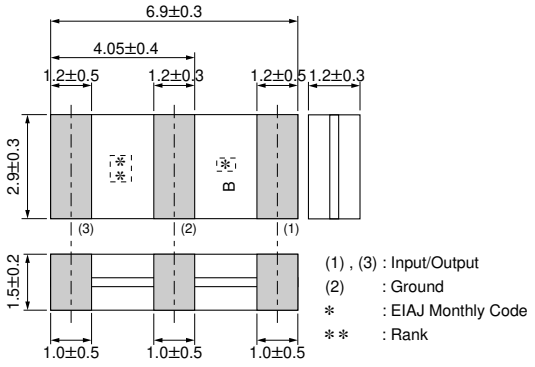
SFECV10.7MA5-A



SFECV10.7MS2-A

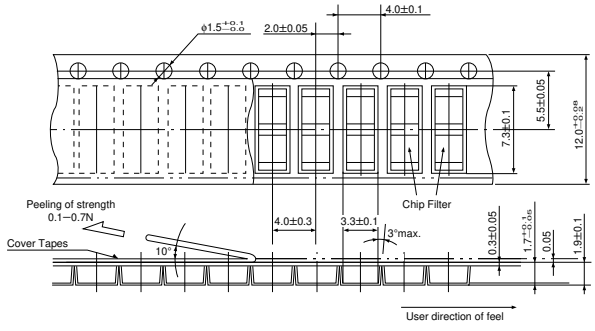


■DIMENSIONS



(in mm)

■DIMENSIONS OF PLASTICS TAPE



Packaging Quantity : 2000 pcs / reel (ϕ180mm)

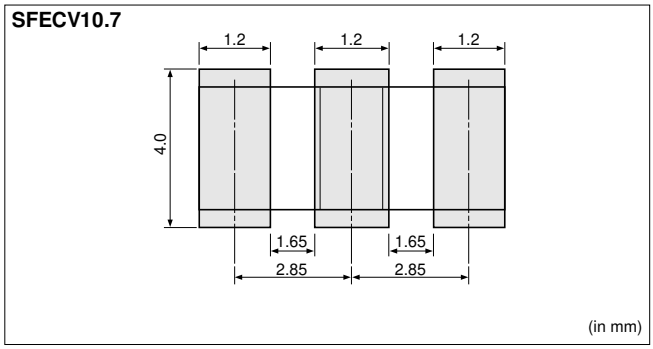
(in mm)

■SPECIFICATIONS

Char. \ Part Number	SFECV10.7MA5-Z	SFECV10.7MS2-Z	SFECV10.7MS3-Z	SFECV10.7MJ-Z
Center Frequency(f_0)	A : 10.700MHz±30kHz max. B : 10.670MHz±30kHz max. C : 10.730MHz±30kHz max. D : 10.640MHz±30kHz max. E : 10.760MHz±30kHz max. Provided that the center point of 3dB band width should be the center frequency and identified by the letters : A, B, C, D or E			
3dB Pass Band Width	280±50kHz	230±50kHz	180±40kHz	150±40kHz
20dB Attenuation Band Width	590kHz max.	510kHz max.	470kHz max.	380kHz max.
Insertion Loss	3.0±2.0dB	3.5±2.0dB	4.0±2.0dB	5.5±2.0dB
Spurious Attenuation (9-12 MHz)	35dB mn.	35dB min.	35dB min.	35dB min.
Input/Output Matching Impedance	330Ω			

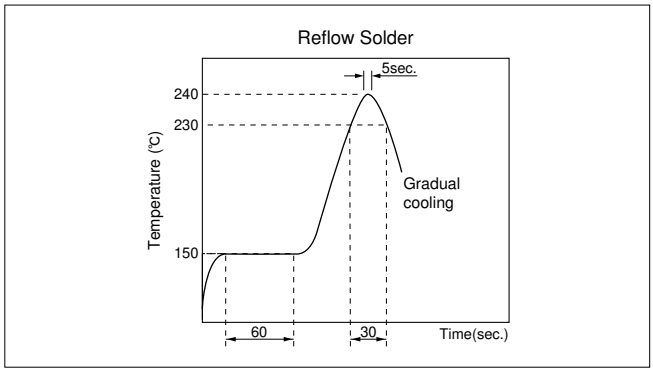
■APPLICATIONS

(1) Standard Land Dimensions



(2) Soldering Conditions

● **Standard soldering conditions**



● **Soldering with iron**

Soldering conditions : Soldering iron temperature 300℃
Soldering time less than 3 seconds.

Note : Please solder this chip ceramic filter so that the soldering iron should not touch the chip body directly.

(3) Cleaning conditions

Please avoid cleaning this chip ceramic filter with vapor or immersion because this type is not perfectly shielded.

CERAMIC FILTER

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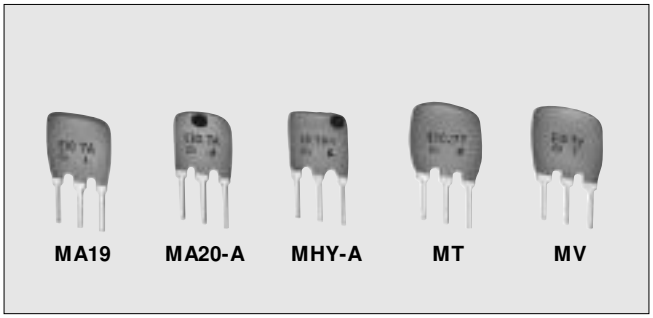
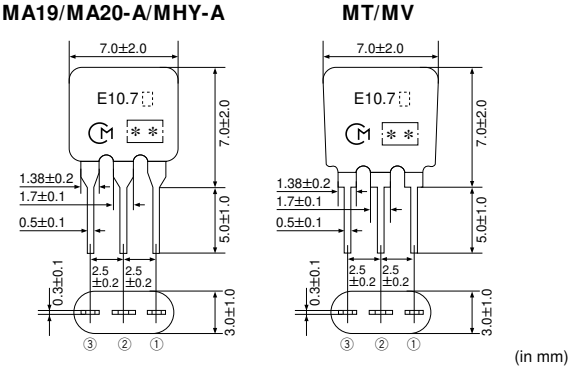
Wider/Narrow Band-width Type SFE10.7 Series

■FEATURES

1. Realizes wider or narrower band characteristics not obtained by conventional ceramic filters.
2. Temperature characteristics are the best available, the same as those of Murata's conventional ceramic filters. Thus, even in the case of narrow band filters, the center frequency is stable even if temperature changes.



■DIMENSIONS

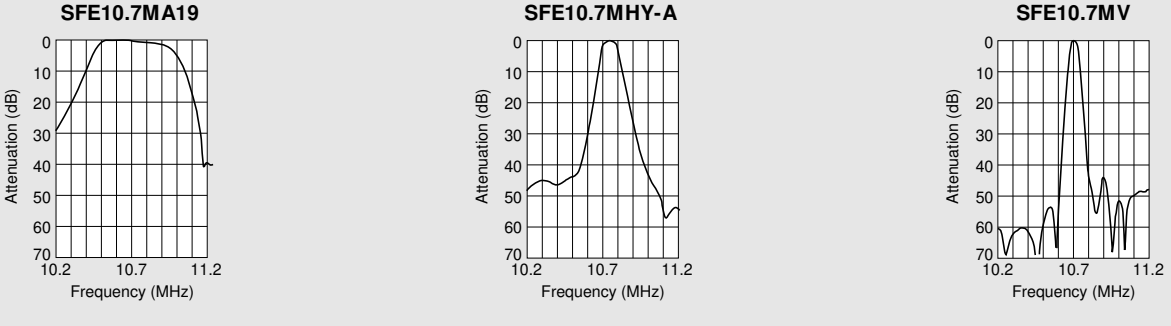


■SPECIFICATIONS

Part Number	3dB Band Width (kHz)	20dB Band Width (kHz) max.	Insertion Loss (dB)	Spurious Attenuation (9—12MHz) (dB)
SFE10.7MA19	350 min. (450)	950 max. (750)	3±2	20 min. (30)
SFE10.7MA20-A	330±50	680 max. (615)	4±2	30 min. (40)
SFE10.7MHY-A	110±30	350 max. (260)	7±2	30 min. (42)
SFE10.7MT	±25kHz min. (82)	200 max. (160)	6.5±2.5	30 min. (48)
SFE10.7MV	±13kHz min. (56)	135 max. (110)	6±2	30 min. (41)

● Input/output matching impedance : 330Ω (MA20-A, MHY-A, MT, MV), 470Ω (MA19) ( )Typ.value

■FREQUENCY CHARACTERISTICS



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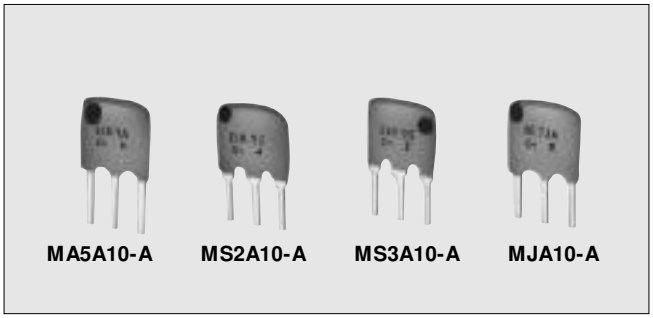
Low Loss Type SFE10.7□A10 Series

■FEATURES

1. Insertion loss is 1—1.5dB lower than conventional products. This types are useful for elevating the sensitivity of sets.
2. Excellent shape factor of frequency response.
3. Good wareform symmetry.



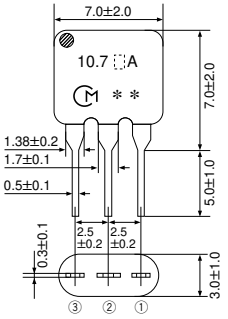
MA5A10-A MS2A10-A MS3A10-A MJA10-A

■SPECIFICATIONS

Part Number	3dB Band Width (kHz)	20dB Band Width (kHz) max.	Insertion Loss (dB)	Spurious Attenuation (9—12MHz) (dB) min.
SFE10.7MA5A10-Z	280±50	590 (480)	2.5±2.0	30 (42)
SFE10.7MS2A10-Z	230±50	520 (400)	3.0±2.0	35 (43)
SFE10.7MS3A10-Z	180±40	470 (360)	3.5±1.5	35 (43)
SFE10.7MJA10-Z	150±30	360 (290)	4.0±2.0	35 (44)

● Input/output matching impedance : 330Ω ( )Typ.value

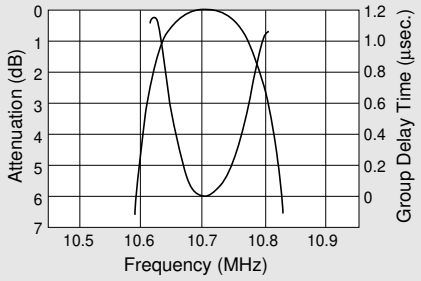
■DIMENSIONS



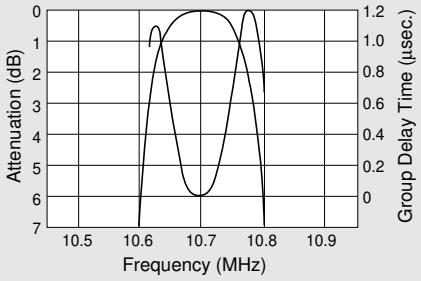
(in mm)

■FREQUENCY CHARACTERISTICS

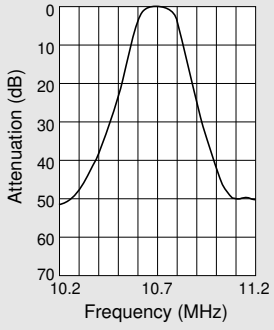
SFE10.7MS3A10-A



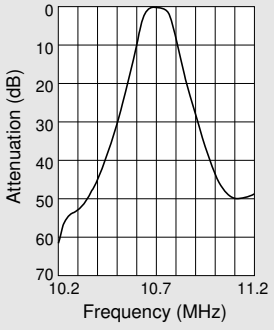
SFE10.7MJA10-A



SFE10.7MS3A10-A



SFE10.7MJA10-A



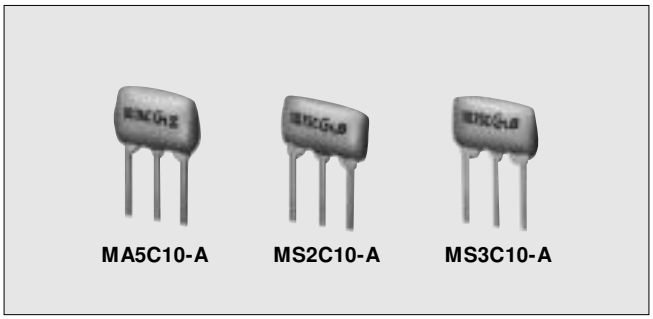
CERAMIC FILTER

*CERAFIL® is the Registered Trademark of Murata's Ceramic Filters.

Low Profile Type SFE10.7□C10 Series

■FEATURES

1. Installed height is 5 mm, making it well suited for compact, thin sets.
2. Electrical characteristics and performance are the same as those of the ceramic filter SFE 10.7 series.



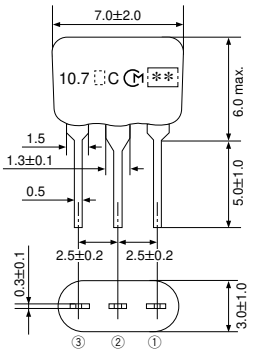
MA5C10-A MS2C10-A MS3C10-A

■SPECIFICATIONS

Part Number	3dB Band Width (kHz)	20dB Band Width (kHz) max.	Insertion Loss (dB)	Spurious Attenuation (9—12MHz) (dB) min.
SFE10.7MA5C10-Z	280±50	650 (546)	3.0±2.0	30 (47)
SFE10.7MS2C10-Z	230±50	570 (474)	3.0±2.0	40 (48)
SFE10.7MS3C10-Z	180±40	470 (360)	3.5±2.0	35 (45)

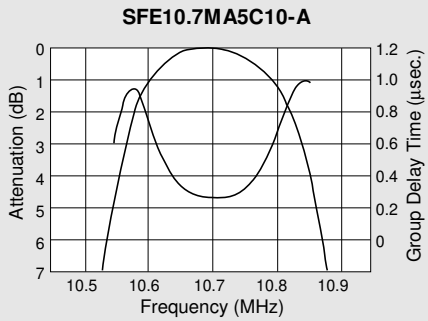
● Input/output matching impedance : 330Ω ( )Typ.value

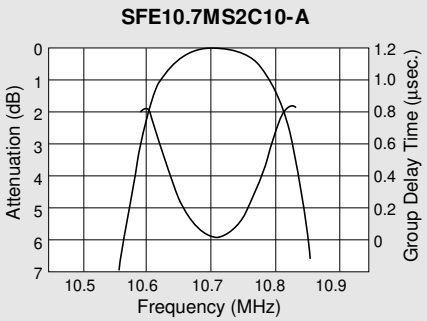
■DIMENSIONS

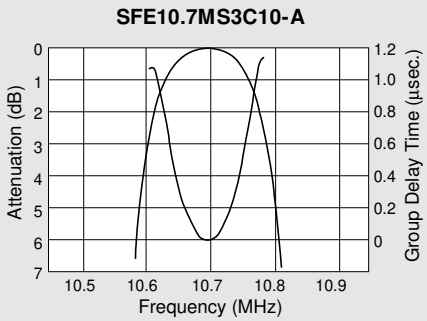


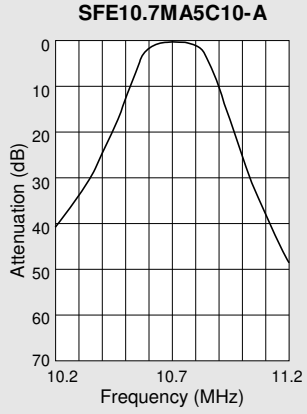
(in mm)

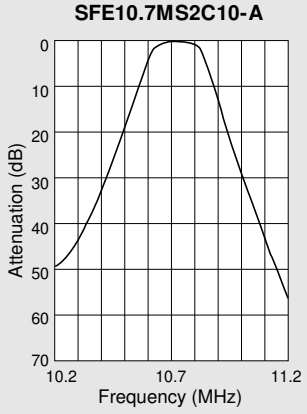
■FREQUENCY CHARACTERISTICS

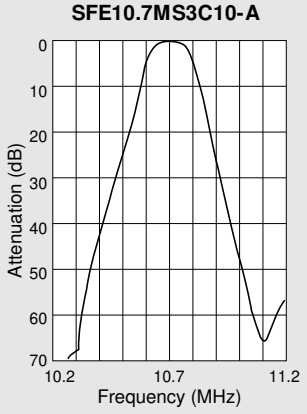












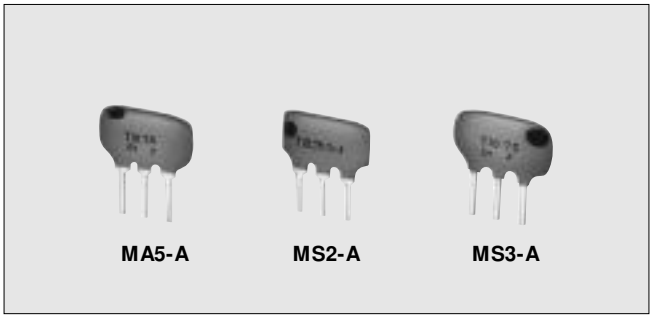
CERAMIC FILTER

*CERAFIL® is the Registered Trademark of Murata's Ceramic Filters.

3-element Type SFT10.7 Series

■FEATURES

1. It has an excellent shape factor, and it is possible to obtain 1.5 times more excellent selectivity than SFE 10.7 series(by detuning±300 or 400kHz).
2. Good performance of spurious suppression.
3. Having the same terminal pitch as the SFE 10.7 series, it easily replaces that series.
4. By replacing two SFE 10.7 series filters with one SFT 10.7 filter,more compact sets can be made.
5. Well-suited for 1-chip ICs.

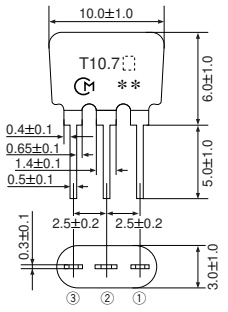


■SPECIFICATIONS

Part Number	3dB Band Width (kHz)	40dB Band Width (kHz) max.	Insertion Loss (dB)	Spurious Attenuation (9—12MHz) (dB) min.
SFT10.7MA5-Z	280±50	700 (630)	6±2	50 (60)
SFT10.7MS2-Z	230±40	650 (580)	6±2	50 (60)
SFT10.7MS3-Z	180±40	550 (500)	8±2	50 (60)

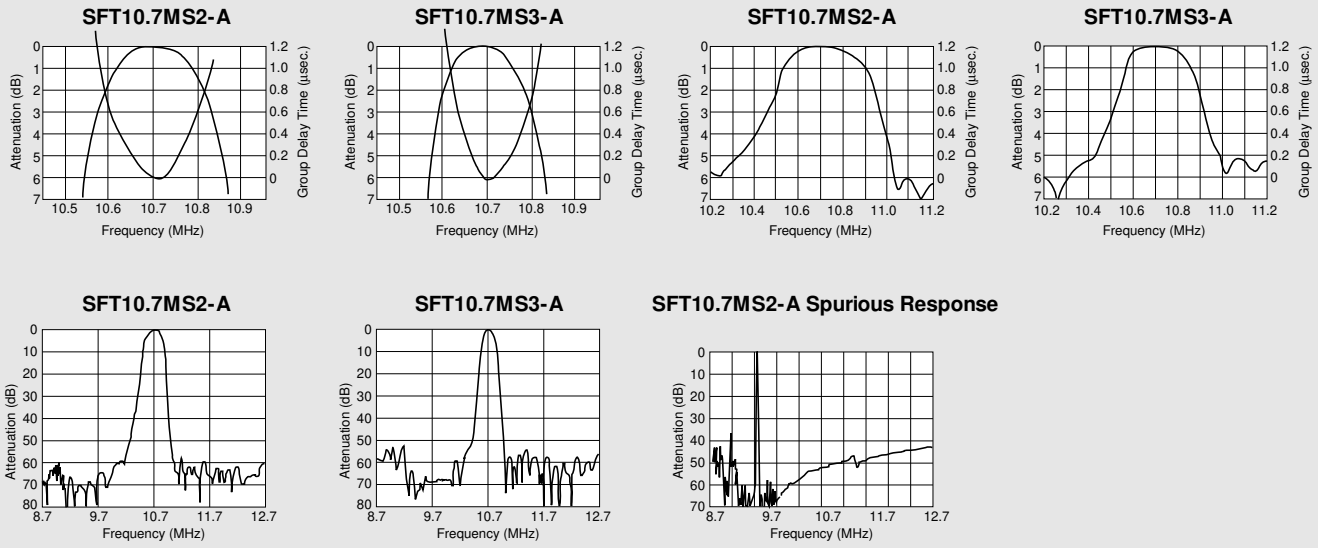
- Input/output matching impedance : 330Ω ( )Typ.value
- SFT10.7 series is good to replace with SFE10.7 series because of its higher selectivity.

■DIMENSIONS



(in mm)

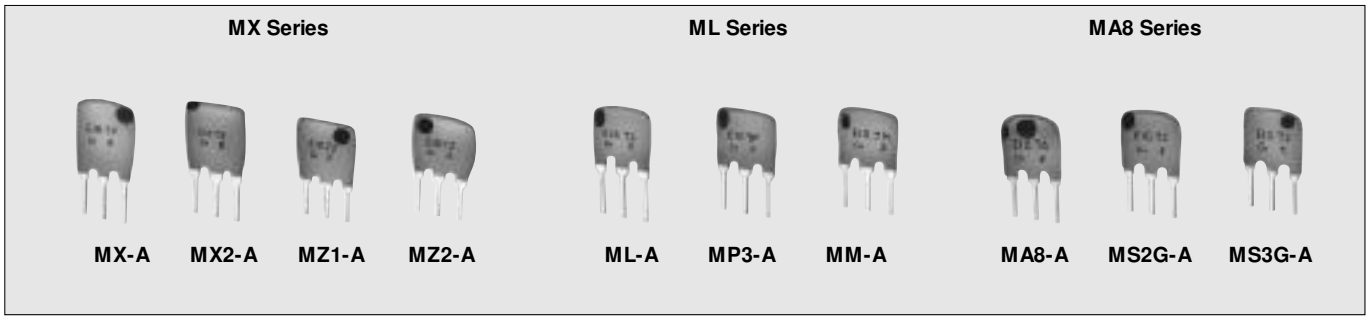
■FREQUENCY CHARACTERISTICS



CERAMIC FILTER

*CERAFIL® is the Registered Trademark of Murata's Ceramic Filters.

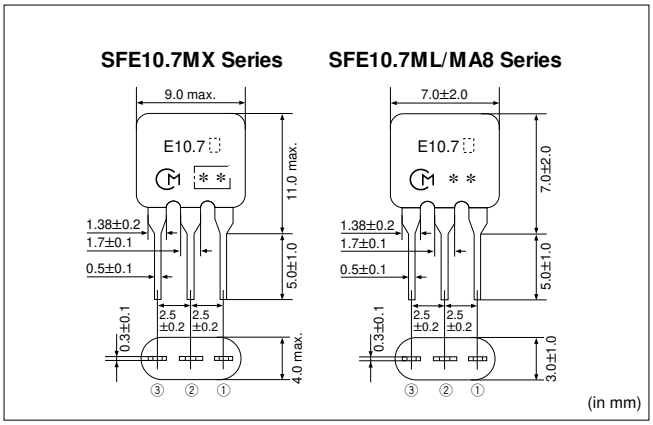
For Stereo Tuners (G. D. T. Waveform Control Product) SFE10.7 Series



■FEATURES

1. Little dispersion of amplitude characteristics and phase characteristics(G. D. T. characteristics)
2. The SFE 10.7 MX series has G.D.T characteristics and is useful for obtaining low distortion.
   SFE 10.7 ML series, in these ceramic filters, being in harmony with flatness of G.D.T., roundness of the amplitude and selectivity characteristics, therefore, these ceramic filters are suitable to high-grade stereo tuners.
   Even if mismatching condition, they can keep little distortion because of low Qm of ceramic material.
   The SFE 10.7 MA8 series is based on SFE 10.7 MA5/MS2
   /MS3, and it obtains high selectivity with low loss.
   There is little dispersion of amplitude and G.D.T. characteristics, and low distortion rate can be obtained.
3. All products are inspected for symmetry and roundness of amplitude characteristics, and the flatness of G.D.T. characteristics.

■DIMENSIONS



■SPECIFICATIONS

	Char. / Part Number	3dB Band Width (kHz)	20dB Band Width (kHz) max.	Insertion Loss (dB) max.	Spurious Attenuation. min.	G. D. T. Band Width (kHz) min.
MX Series	SFE10.7MX-Z	250±40	670 (620)	12 (10)	25 (33)	Deviation : 0.2μ sec. max. (Within of ±110kHz)
	SFE10.7MX2-Z	220±40	610 (560)	12.5 (10.5)	30 (37)	Deviation : 0.15μ sec. max. (Within of ±80kHz)
	SFE10.7MZ1-Z	180±30	530 (460)	14 (12.3)	33 (38)	Deviation : 0.15μ sec. max. (Within of ±60kHz)
	SFE10.7MZ2-Z	150±30	500 (420)	14 (12.6)	35 (41)	Deviation : 0.15μ sec. max. (Within of ±50kHz)
ML Series	SFE10.7ML-Z	280±50	650 (610)	9 (7)	25 (33)	0.25μsec. f0±70 (±105) kHz
	SFE10.7MP3-Z	250±50	650 (550)	10 (8)	30 (35)	0.25μsec. f0±65 (±90) kHz
	SFE10.7MM-Z	230±50	600 (510)	11 (9)	30 (38)	0.25μsec. f0±60 (±85) kHz
MA8 Series	SFE10.7MA8-Z	280±50	650 (520)	6 (4)	30 (43)	0.5μsec. f0±80 (±100) kHz
	SFE10.7MS2G-Z	230±50	600 (420)	7 (4.5)	40 (45)	0.5μsec. f0±60 (±75) kHz
	SFE10.7MS3G-Z	180±40	520 (380)	9 (5)	40 (45)	0.5μsec. f0±45 (±60) kHz

● Input/output matching impedance : 330Ω ( )Typ.value

CERAMIC FILTER

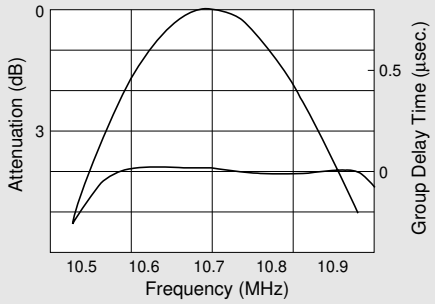
*CERAFIL® is the Registered Trademark of Murata's Ceramic Filters.

For Stereo Tuners (G. D. T. Waveform Control Product) SFE10.7 Series

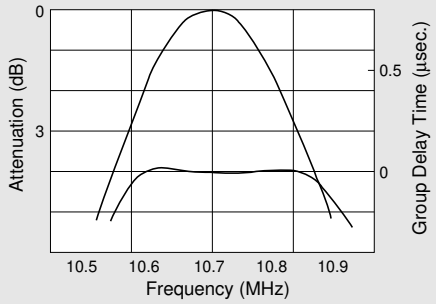
■FREQUENCY CHARACTERISTICS

● MX series

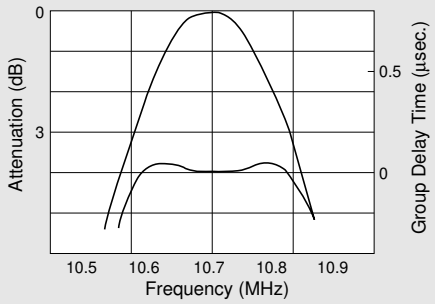
SFE10.7MX-A



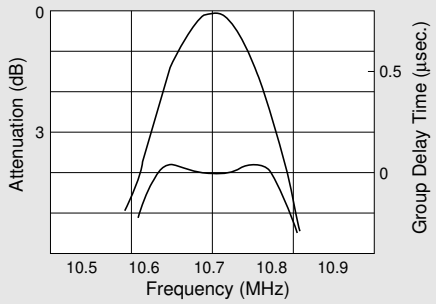
SFE10.7MX2-A



SFE10.7MZ1-A

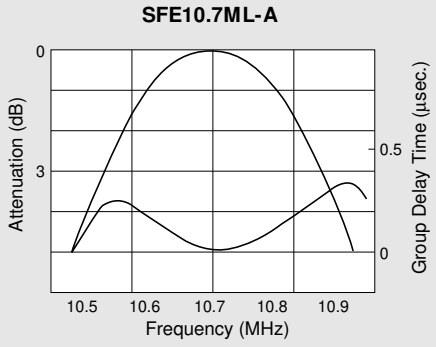


SFE10.7MZ2-A

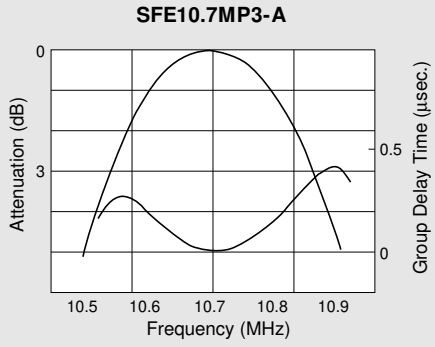


● ML series

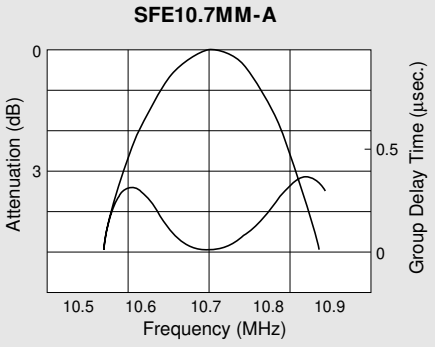
SFE10.7ML-A



SFE10.7MP3-A

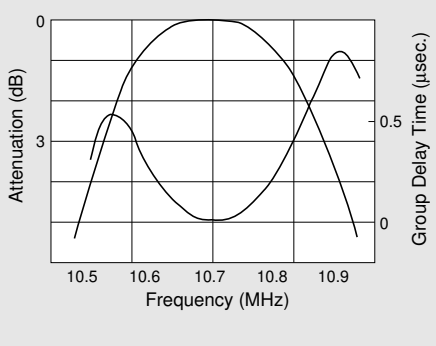


SFE10.7MM-A

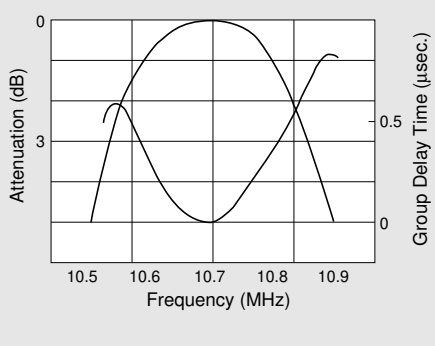


● MA8 series

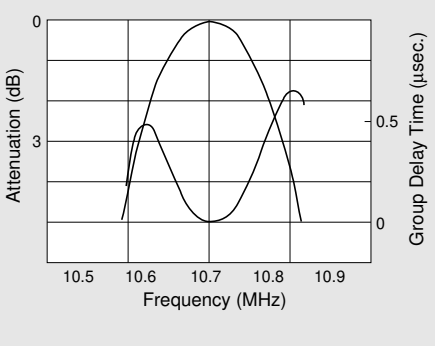
SFE10.7MA8-A



SFE10.7MS2G-A



SFE10.7MS3G-A

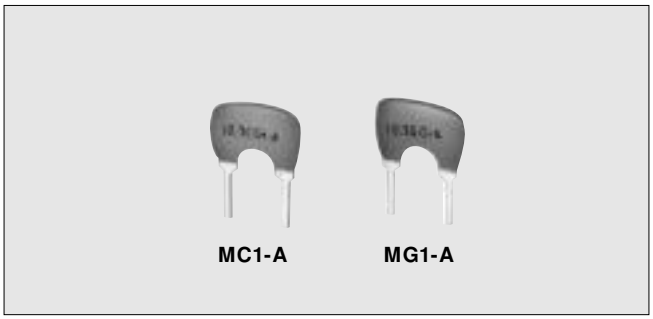


CERAMIC DISCRIMINATOR

Ceramic Discriminator CDA10.7 Series For FM Detection

Well-suited for Miniaturization without Adjustment

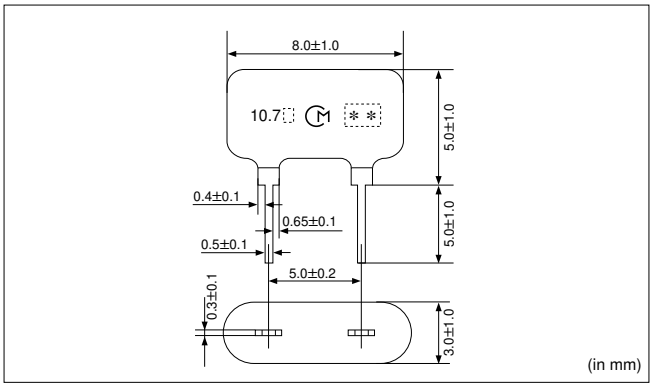
In conformity with trends for higher performance audio devices, demand has grown for non-adjustment, single chip ICs.
Murata's ceramic discriminator CDA10.7 series forms a resonator on a piezoelectric ceramic substrate.
In combination with ICs, this type obtains stable demodulation characteristics in wide bandwidths.



■FEATURES

1. Compact and excellent mechanical strength.
2. Can be combined with various ICs. The IC is determined by the last number in the part number.
3. Stable demodulation characteristics can be obtained without adjustment.
4. The MG type for wide bandwidths and the MC type for narrow bandwidths are available.
5. Stable temperature characteristics.
6. We recommend kits : ceramic discriminator CDA10.7 series and Cerafil® SFE10.7 of the same frequency rank.

■DIMENSIONS



■SPECIFICATIONS

Part Number	Demodulation Output (mV) at f_0	Distortion Factor (%) max. at f_0	Demodulation 3dB Band width (kHz) min.	Detection System	IC
CDA10.7MG1-Z	25 min.	1.0 (0.1)	345 (500)	Quadrature	CX20029
					CX20111
CDA10.7MG16-Z	60–90 min.	0.9 (0.5)	300 (370)	Quadrature	TA8122AN/AF
CDA10.7MG48-Z	700 min.	1.0 (0.2)	400 (560)	Quadrature	LA1835
CDA10.7MC1-Z	35 min.	1.0 (0.2)	242 (370)	Quadrature	CXA1019M
					CX20091

( )Typ.value

* Input signal conditions
CDA10.7MG1-Z : Input Level 100dBμ Mod.Freq. 400Hz Freq.Dev. ±22.5kHz
CDA10.7MG16-Z : Input Level 80dBμ Mod.Freq.1000Hz Freq.Dev. ±22.5kHz
CDA10.7MG48-Z : Input Level 112dBμ Mod.Freq.1000Hz Freq.Dev. ± 75kHz
CDA10.7MC1-Z : Input Level 100dBμ Mod.Freq. 400Hz Freq.Dev. ±22.5kHz

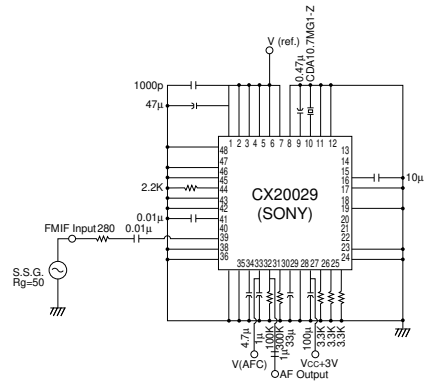
- Center frequency rank
A (Red) : 10.70MHz±30kHz
B (Blue) : 10.67MHz±30kHz
C (Orange) : 10.73MHz±30kHz
D (Black) : 10.64MHz±30kHz
E (White) : 10.76MHz±30kHz
Z : A.B.C.D.E 5 ranks mixed.

CERAMIC DISCRIMINATOR

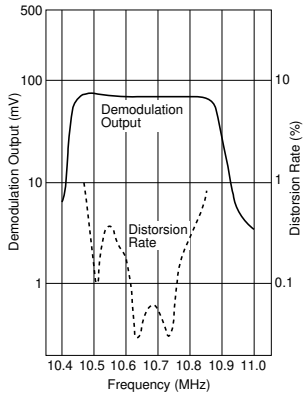
Ceramic Discriminator CDA10.7 Series For FM Detection

■FREQUENCY CHARACTERISTICS

TEST CIRCUIT OF CDA10.7MG1-Z

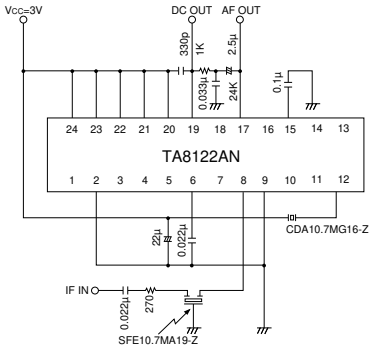


CDA10.7MG1-A

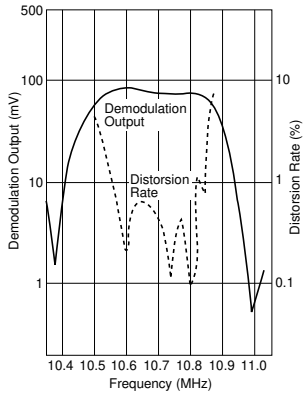


Input signal conditions
Input Level 100dBµ
Mod.Freq. 400Hz
Freq.Dev. ±22.5kHz

TEST CIRCUIT OF CDA10.7MG16-Z

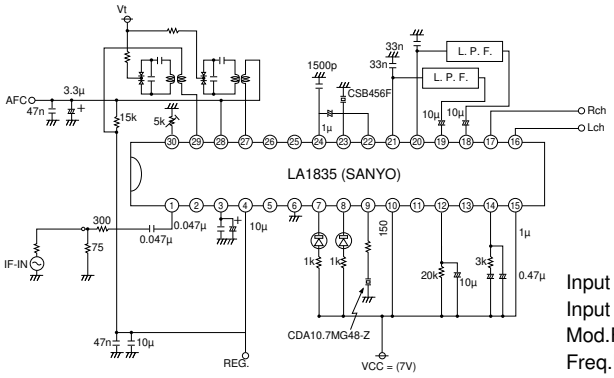


CDA10.7MG16-A

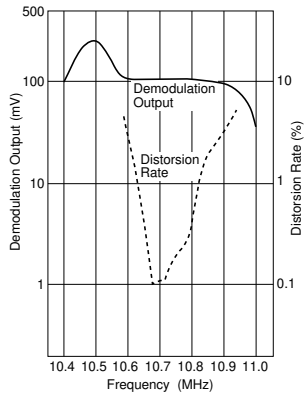


Input signal conditions
Input Level 80dBµ
Mod.Freq. 1000Hz
Freq.Dev. ±22.5kHz

TEST CIRCUIT OF CDA10.7MG48-Z

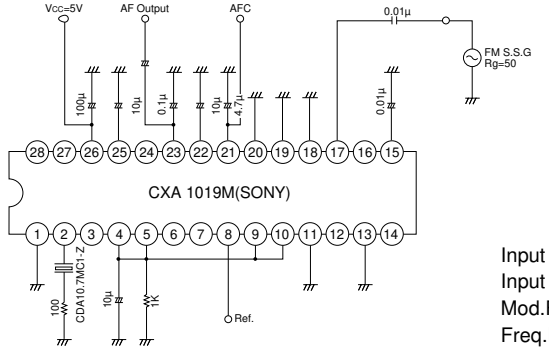


CDA10.7MG48-A

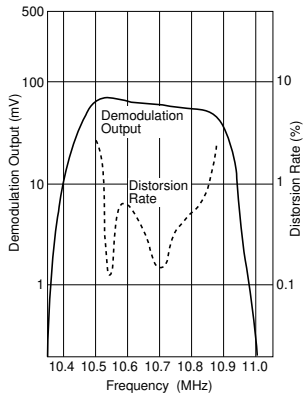


Input signal conditions
Input Level 112dBµ
Mod.Freq. 1000Hz
Freq.Dev. ±75kHz

TEST CIRCUIT OF CDA10.7MC1-Z



CDA10.7MC1-A



Input signal conditions
Input Level 100dBµ
Mod.Freq. 400Hz
Freq.Dev. ±22.5kHz

CERAMIC DISCRIMINATOR

Ceramic Discriminator CDA10.7 Series For FM Detection

■CERAMIC DISCRIMINATOR LIST FOR FM RECEIVER

CDA10.7MG Type

Part Number	Corresponding IC
CDA10.7MG1-Z	CX-20029/CX-20111
CDA10.7MG2-Z	CX-831
CDA10.7MG4-Z	BA4234L
CDA10.7MG6-Z	TA7640AP
CDA10.7MG7-Z	LA1260
CDA10.7MG8-Z	TA7303P
CDA10.7MG9-Z	TA7130P
CDA10.7MG12-Z	CXA1030P
CDA10.7MG13-Z	AN7007SU
CDA10.7MG14A-Z	AN7006S
CDA10.7MG15-Z	LA1816
CDA10.7MG16-Z	TA8122AN
CDA10.7MG17-Z	TEA5591
CDA10.7MG18-Z	TA8132N
CDA10.7MG19-Z	BA1440
CDA10.7MG20-Z	NE604
CDA10.7MG21	TBA229-2
CDA10.7MG22-Z	LA1810
CDA10.7MG23-Z	LA7770
CDA10.7MG24	TDA2557
CDA10.7MG25V	U829B
CDA10.7MG26-Z	LA1805
CDA10.7MG27-Z	CXA1238
CDA10.7MG28-Z	U2501B
CDA10.7MG29	TBA120U
CDA10.7MG30-Z	TE5592
CDA10.7MG31-Z	TA2003
CDA10.7MG32-Z	CXA1343M
CDA10.7MG33-Z	TA2007
CDA10.7MG34V	U4490B
CDA10.7MG35-Z	TEA5594
CDA10.7MG36-Z	TA2029
CDA10.7MG37-Z	LA1830
CDA10.7MG39-Z	TA8186
CDA10.7MG40-Z	TEA5710
CDA10.7MG41-Z	BA4220
CDA10.7MG42-Z	SA605
CDA10.7MG43-Z	LA1831
CDA10.7MG45-Z	TA2008
CDA10.7MG46-Z	LA1832
CDA10.7MG47A	SA626
CDA10.7MG48-Z	LA1835
CDA10.7MG49-Z	MC13156
CDA10.7MG50-Z	TA2022

Part Number	Corresponding IC
CDA10.7MG51-Z	TDA1576T
CDA10.7MG52-Z	MC13173
CDA10.7MG53-Z	AN7232
CDA10.7MG54-Z	CXA1376
CDA10.7MG55-Z	TEA5712T
CDA10.7MG56-Z	uPC1391H
CDA10.7MG57-Z	TA2057
CDA10.7MG58-Z	TA2046
CDA10.7MG59V	KA2244
CDA10.7MG60-Z	BA1448/1449
CDA10.7MG61-Z	TEA5762
CDA10.7MG62-Z	TK14581
CDA10.7MG63-Z	KA2292
CDA10.7MG64-Z	KA2295
CDA10.7MG65-Z	KA2298
CDA10.7MG66-Z	BA4110
CDA10.7MG67-Z	BA4240L
CDA10.7MG68-Z	CXA1991N
CDA10.7MG69-Z	CXA1538
CDA10.7MG70-Z	LA1150
CDA10.7MG71-Z	TA7765AF
CDA10.7MG72	TA31161
CDA10.7MG74-Z	LA1838
CDA10.7MG75-Z	CXA1611
CDA10.7MG76-Z	CXA3067M
CDA10.7MG77-Z	TA2111
CDA10.7MG82-Z	TA2099

CDA10.7MC Type

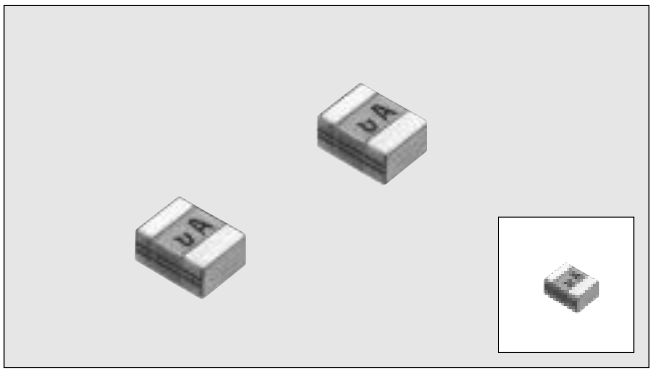
Part Number	Corresponding IC
CDA10.7MC1-Z	CXA1019M/CX-20091
CDA10.7MC2-Z	A7687P/F
CDA10.7MC3	AN7220A
CDA10.7MC4A-Z	MC3356P
CDA10.7MC5A-Z	LA7770
CDA10.7MC6-Z	TEA5591
CDA10.7MC10-Z	TEA5594
CDA10.7MC19-Z	BA1440
CDA10.7MC30-Z	TEA5592
CDA10.7MC40-Z	TEA5710
CDA10.7MC43A-Z	LA1831
CDA10.7MC55-Z	TEA5712T/N2

CHIP CERAMIC DISCRIMINATOR

Chip Ceramic Discriminator CDACV10.7 Series

Chip Ceramic Discriminator For Thinner FM Radios.

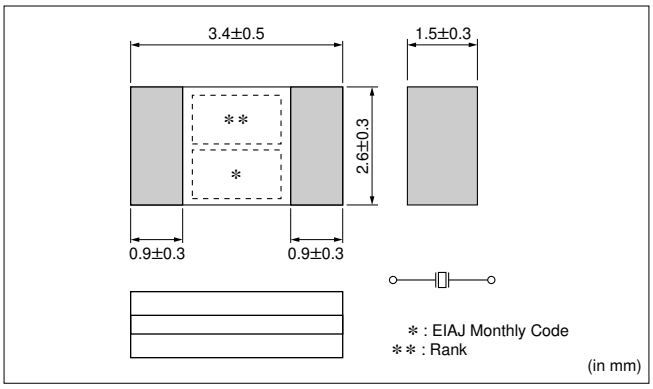
When using chip components in the design of FM radios, their arrangement and space allocation can create design difficulties. To help reduce these problems, Murata has developed this series of chip ceramic discriminators.
The CDACV series has the same structure as the chip CERAFIL® SFECV series, and allow the design of FM detecting circuits requiring no adjustment. Also, these discriminators have good stable demodulation characteristics. The mounting area of the discriminators have been decreased to approximately 80% of conventional models (CDAC). The series will especially contribute to downsizing, height reduction.
The CDACV10.7 series can be used as kits with the CERAFIL® SFECV10.7 series to facilitate design.



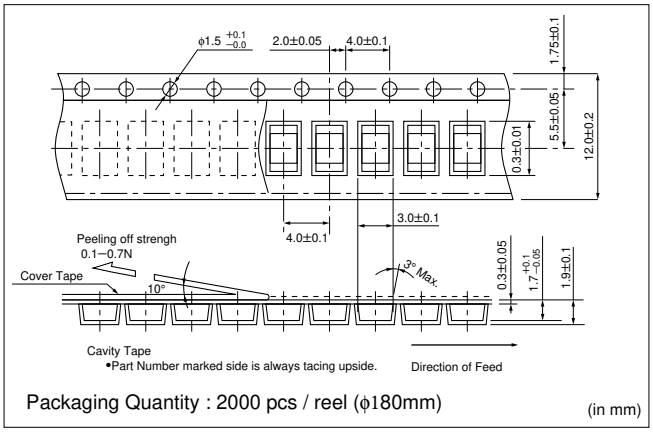
■FEATURES

1. The discriminator is only 1.5mm thick so it is well suited for thin circuit boards.
2. This discriminator can be used with a variety of ICs including the following examples : CX-20029 (Sony)
   TA8122AF (Toshiba)
   TA2022 (Toshiba)
   CXA1538N (Sony)
3. It exhibits demodulation characteristics over a wide frequency range without the need for adjustment.
4. The series has excellent temperature characteristics and good aging stability.
5. The series has the same structure as the chip Cerafil® SFECV10.7 series. It is suitable for automatic mounting and its excellent heat resistance allows reflow soldering.
6. This series(CDACV10.7)and the chip Cerafil® SFECV10.7 series can be supplied with the equivalent center frequency as kits.

■DIMENSIONS



■DIMENSIONS OF PLASTIC TAPE



Packaging Quantity : 2000 pcs / reel (φ180mm)

(in mm)

CHIP CERAMIC DISCRIMINATOR

Chip Ceramic Discriminator CDACV10.7 Series

■SPECIFICATIONS

Part Number	Demodulation Output (mV) at f_0	Distortion Factor (%) max. at f_0	Demodulation 3dB Band width (kHz) min.	Detection System	IC
CDACV10.7MG1-Z	55 min.	1.0 (0.3)	f_0±150	Quadrature	CXA20029 CXA20111
CDACV10.7MG16-Z	Within 60 to 90	0.9 (0.3)	300	Quadrature	TA8122F
CDACV10.7MG50-Z	35 min.	0.8 (0.2)	200	Quadrature	TA2022
CDACV10.7MG69-Z	80 min.	1.0 (0.3)	330	Quadrature	CXA1538N

( )Typ.value

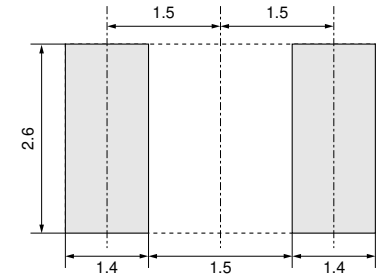
∗Input signal conditions

CDACV10.7MG1-Z : Input Level 100dBμ Mod.Freq.1000Hz Freq.Dev. ±22.5kHz
CDACV10.7MG16-Z : Input Level 80dBμ Mod.Freq.1000Hz Freq.Dev. ±22.5kHz
CDACV10.7MG50-Z : Input Level 100dBμ Mod.Freq.1000Hz Freq.Dev. ±22.5kHz
CDACV10.7MG69-Z : Input Level 100dBμ Mod.Freq.1000Hz Freq.Dev. ± 75kHz

■APPLICATIONS

(1) Standard Land Dimensions

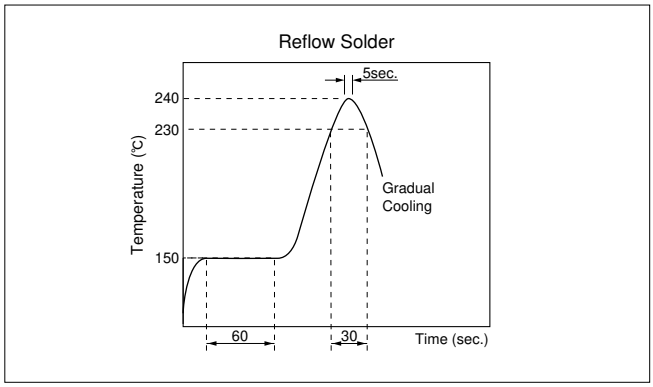
CDAC10.7



(in mm)

(2) Soldering Conditions

● **Standard soldering conditions**



● **Soldering with iron**

Soldering conditions : Soldering iron temperature 280℃ ;
Soldering time less than 3 seconds.

Note: Do not allow the tip of the soldering iron to directly contact the chip ceramic discriminator.

(3) Cleaning conditions

Please avoid cleaning this chip ceramic discriminator using the vapor or immersion methods because it is not perfectly shielded.

■NOTICE

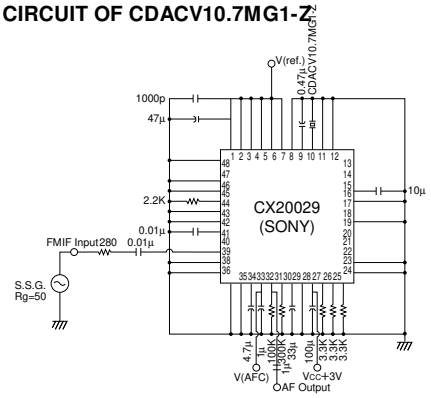
1. Please avoid applying an excessive stress to the ceramic filter because it might be damaged.
2. Ceramic discriminators are designed to perform as intended in conjunction with specific ICs.
   Please contact us for the appropriate part number of the ceramic discriminator to be matched with the IC.
   It is also strongly recommended to evaluate the ceramic discriminator after mounting it on your products prior to series production.
3. These ceramic discriminator are designed to be used in the portable FM radio application.
   Please avoid using it for Car radio and other application which require high stability over a wide temperature range.

CHIP CERAMIC DISCRIMINATOR

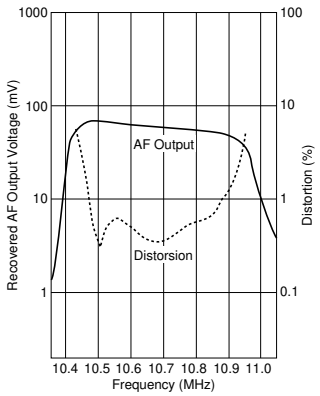
Chip Ceramic Discriminator CDAC10.7 Series

■FREQUENCY CHARACTERISTICS

TEST CIRCUIT OF CDACV10.7MG1-Z

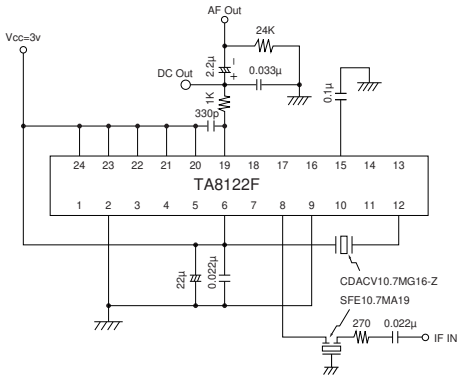


CDACV10.7MG1-A

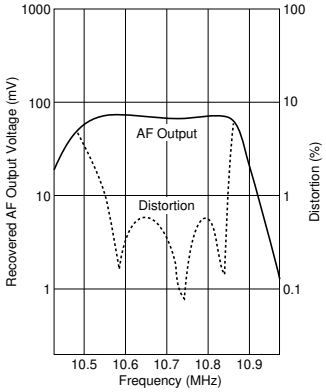


Input signal conditions
Input Level 100dBµ
Mod.Freq. 1000Hz
Freq.Dev. ±22.5kHz

TEST CIRCUIT OF CDACV10.7MG16-Z

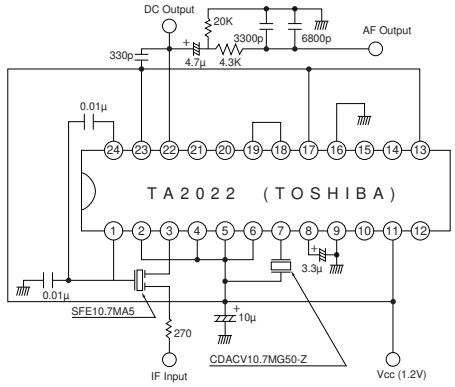


CDACV10.7MG16-A

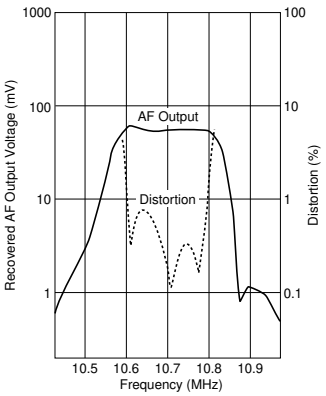


Input signal conditions
Input Level 80dBµ
Mod.Freq. 1000Hz
Freq.Dev. ±22.5kHz

TEST CIRCUIT OF CDACV10.7MG50-Z

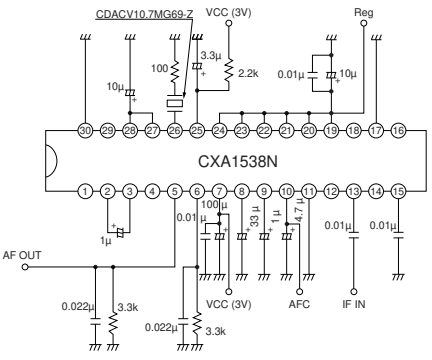


CDACV10.7MG50-A

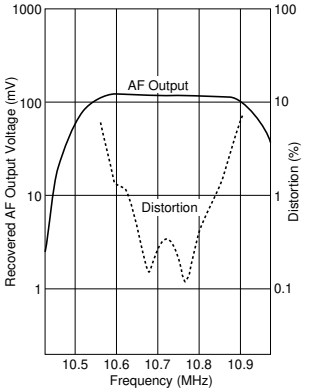


Input signal conditions
Input Level 100dBµ
Mod.Freq. 1000Hz
Freq.Dev. ±22.5kHz

TEST CIRCUIT OF CDACV10.7MG69-Z



CDACV10.7MG69-A



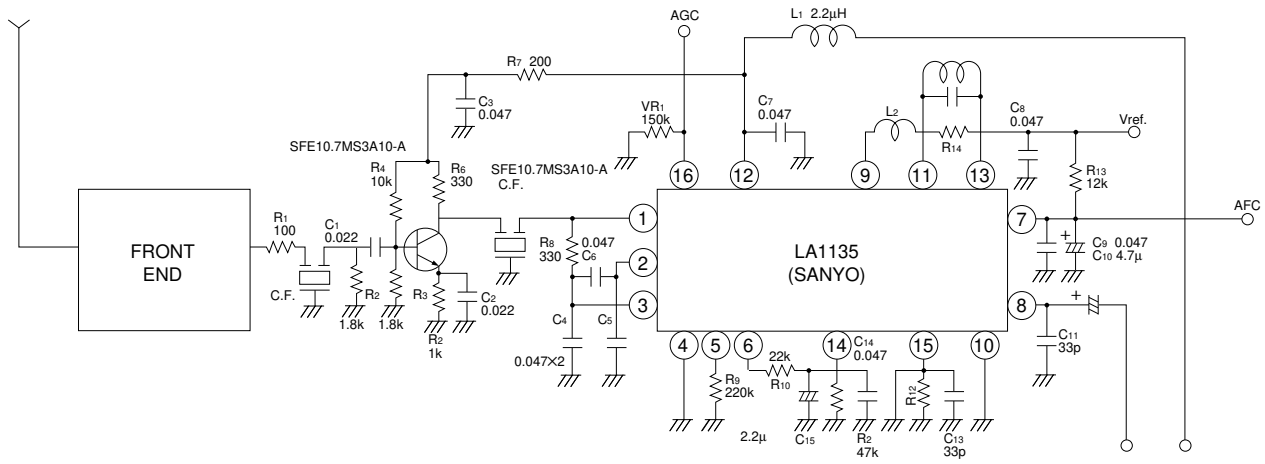
Input signal conditions
Input Level 100dBµ
Mod.Freq. 1000Hz
Freq.Dev. ±75kHz

CERAMIC FILTER

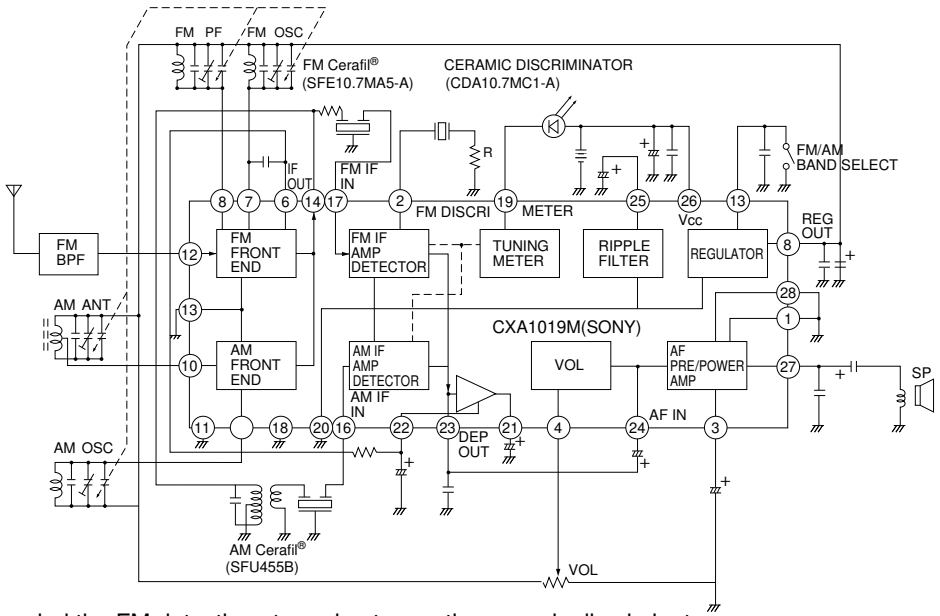
*CERAFIL® is the Registered Trademark of Murata's Ceramic Filters.

EXAMPLE OF APPLIED CIRCUIT

Application for LA1140 (Car Radio)



Application for CXA1019M (Radio)



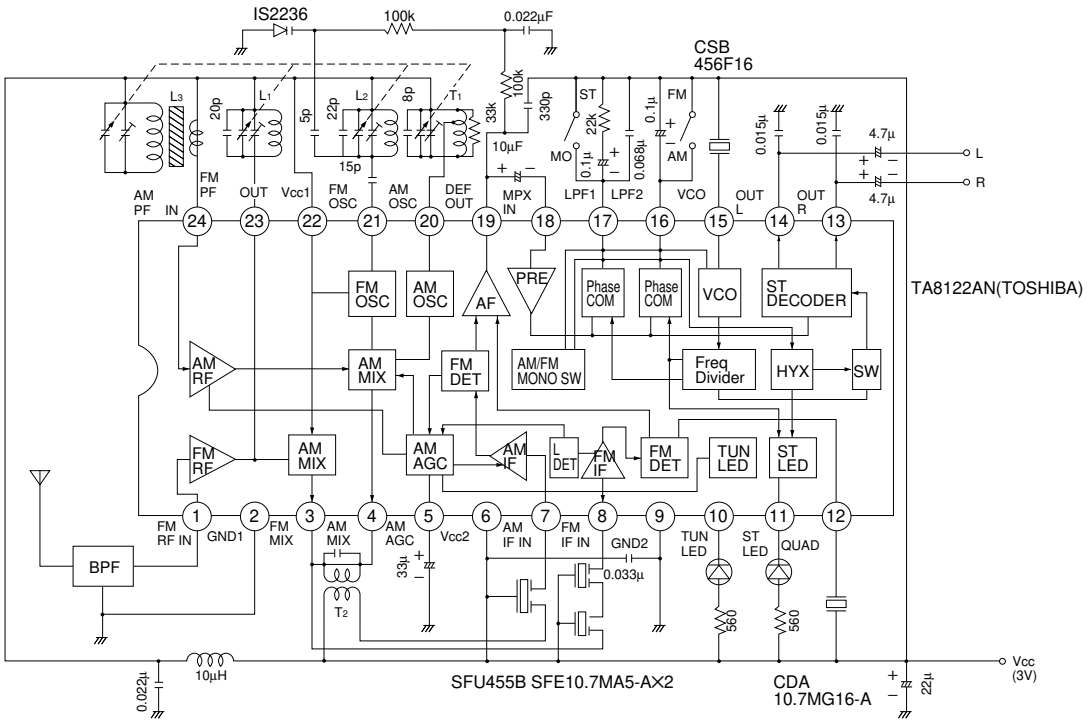
No adjustment is needed the FM detection stage due to use the ceramic discriminator.

CERAMIC FILTER

*CERAFIL® is the Registered Trademark of Murata's Ceramic Filters.

EXAMPLE OF APPLIED CIRCUIT

Application for TA8122AN/AF (Radio)



Detection and MPX stage adjustment ceramic discriminator and ceramic resonator (CERALOCK®)

Note:

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   ③ Undersea equipment
   ④ Medical equipment
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   ⑦ Disaster prevention / crime prevention equipment
   ⑧ Data-processing equipment
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